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Docket No. 03-AAER-1
California Energy Commission
1516 Ninth Street, Mail Station 4
Sacramento, California 95814-5512

03-AAER-1

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RE: Comments from Lennox International Inc.

Lennox International Inc., a major manufacturer of heating, air conditioning, ventilation and refrigeration equipment appreciates the opportunity to offer comments with respect to the 1) Proposed Amendments to Appliance Efficiency Regulations, Preliminary Working Draft dated May 12, 2004 2) Workshop conducted on May 27, 2004 and 3) the Codes and Standards Initiative for PY2004: Title 20 Standards Development, Analysis of Standards Options for Central Furnace Air Handlers prepared by Davis Energy Group (DEG) and the American Council for an Energy Efficient Economy (ACEEE) for Pacific Gas and Electric Company (PG&E).

We fully support the previous comments submitted by our trade Associations, GAMA and ARI, with respect to Residential Air Handler Fans, Unit Heaters and Duct Furnaces, Large Packaged Air-Cooled Commercial Air Conditioners (240,000-760,000 Btuh), Commercial Refrigerators and Freezers and Walk-in Refrigerators and Freezers.

Additionally, we would like to offer the following comments:

Refrigeration

- Certain frame sizes and power output sizes of ECM motors used in these applications currently do not have a demonstrated record of acceptable field service. Development is underway with prototype performance and reliability testing in progress. However, until field trials and early manufacturing runs have a proven track record, we would request exempting non proven motor sizes from a mandate of ECM technology.
- Page 105, (4) (v): "shall have ECM type motors or motors of equivalent efficiency, for all self-contained compressor/condenser units that are dedicate to the walk-in cabinet, including but not limited to remov(t?)e compressor/condenser units". We assume the intent is to require an ECM or equivalent motor for the evaporator fan only, and on that basis would request clarification of the wording to avoid misinterpretation that the compressor and condenser fan motors must meet the requirement also. Secondly, a prescribed minimum efficiency level would be preferable to the ECM or equivalent specification to offer design flexibility and avoid future debate over the efficiency level intended by this regulation.

Residential Furnace Fans:

- If the Fan Efficiency Ratio (FER) requirements can be justified, we agree that it belongs in 1605.2, and requires a waiver or change in, Federal requirements before it can be enforced.
- We do not believe this proposed requirement meets the provisions of the Warren-Alquist Act for several reasons. First and foremost, PG&E and their contractors DEG and ACEEE have erred in their reporting of the DOE Engineering Analysis Draft Report for Review for Furnaces and Boilers standards Rulemaking on which the justification for this requirement is based. Referring to Section 5.1 and 5.3 of the case study, they state the consumer cost of an ECPM motor is \$133

per DOE. The DOE report, section 5.6 clearly states that the \$133 is “. . . the additional cost to high volume production . . .” The accompanying Excel spreadsheet on the website clearly identifies the additional consumer cost to be \$273 for the non-weatherized furnace Case 1.1 vs 1.1.2 (\$1305-\$1032) based on a \$133 production cost. When corrected, the Incremental Cost is larger than the Present Value of Energy Savings of \$245, resulting in a Net Customer Present Value of -\$28, clearly not meeting the Warren –Alquist requirements. Since DOE projected its \$273 adder on a national conversion of approximately 6,000,000 motors annually, it is doubtful that a California requirement for 350,000 (section 3.2) would result in an adder as low as \$273.

- Section 5.2, Design Life and 5.3 also need to be reevaluated for realism. It is technically unsupportable to assume a zero failure rate, 20 year life for ECPM motors and associated electronics based solely on a statement that ECPM's having been “. . . commercial available for ten years and have a good reliability” and a referenced furnace life of 20 years. Either the supporting statistical data needs to be made available for technical review, or the 20 year life, with 0 failures and repair/replacement expense assumption need to be adjusted to a realistic value in the Life Cycle Cost analysis.
- The GAMA furnace electrical use data referenced by DEG and ACEEE in the case study is mischaracterized, misused, and does not support the conclusions of this case study. Generally, the furnaces with the lowest electric use per unit of gas consumption cited to support the proposed Fan Energy Ratio (FER) levels are two stage combustion systems with ECM blower motors, and in some cases employ a second ECPM motor on the draft inducer. The analysis, as presented, is in error as it neither includes the additional cost of a two stage combustion system, second ECPM motor and control for the draft inducer, nor FER levels based on a single stage ECPM systems.

Respectfully Submitted,



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